

REMARKS

Applicants request reconsideration of this application in view of the present Amendment.

Claims 1-10, 12-33 and 35-37 are pending. Claims 11 and 34 are cancelled. Claims 26, 32 and 37 are amended.

I. Claim Objection

Claim 37 is amended above to correct the typographical error pointed out by the Examiner.

II. 35 U.S.C. § 102(b)

A. *Northup (U.S. 2,896,904)*

Independent claim 1 recites a valve that is (1) coupled to a float such that the valve opens when the float rises above a preselected height within the container and the valve closes when the float falls to the preselected height within the container, (2) associated with the fluid outlet, and (3) oriented at an angle that ranges from an angle greater than zero to about 60° relative to horizontal. Northup does not disclose these elements of claim 1.

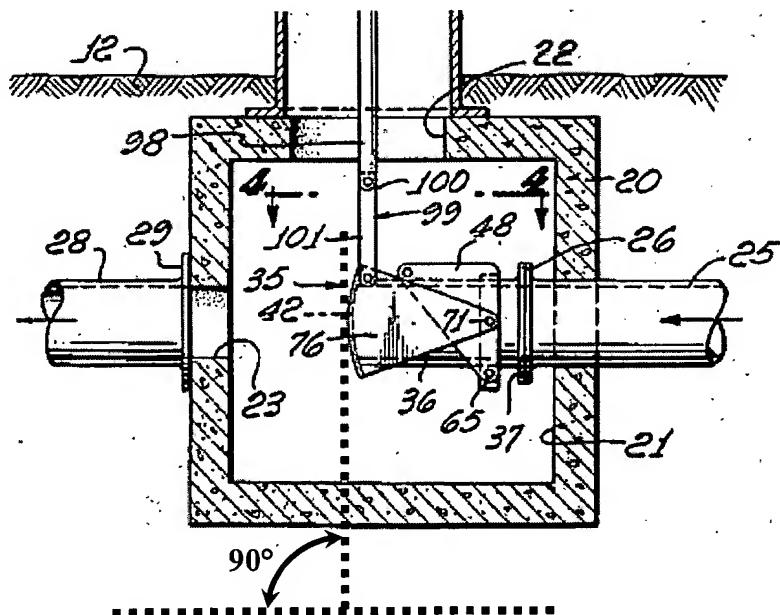
Northup discloses a pressure control gate valve associated with his water inlet conduit for use in applications such as an irrigation system. The function of Northup's inlet gate valve is to control localized water pressure in order to equalize the water pressure across a system. To control the water pressure at a particular branch point in an irrigation system, Northup limits the ability of water to flow into that branch if the pressure is greater than a predetermined value. In Northup's system, water in excess of that which will flow out of his vault 20 under atmospheric pressure rises up into column 32 and impinges upon float 105. As water impinges on Northup's float 105, the float is forced upward. Upward movement of the float causes valve 85 to increasingly close over the opening of the inlet conduit. When the water level in column 32 forces float 105 as far up as it can travel, valve 85 is fully closed. Then as soon as the water pressure is reduced in vault 20 and the water level decreases, float 105 will move downward allowing valve 85 to partially and possibly fully open.

As just described, Northup discloses a valve that *closes* when the float rises to a preselected height, and that *opens* when the water level falls to the preselected height. In

contrast, the valve of claim 1 *opens* when the float rises to a preselected height and *closes* when the float falls to the preselected height.

Furthermore, Northup's valve is attached to his fluid inlet conduit, whereas the valve of claim 1 is associated with the fluid outlet. Northup's valve can only be utilized on his inlet conduit and his system would be inoperable if his valve were moved to his outlet conduit. Specifically, if Northup's valve were moved to his outlet conduit, as pressure built in the vault 20 and water rose in the column 32 and float 105 was force upward the valve would close thereby preventing any water from exiting the vault 20. In this scenario, Northup's valve would not open again until the water pressure dropped, which would not happen until the water source was stopped.

Moreover, Northup does not describe what valve seat angle his valve has in his specification. However, Northup's Fig. 2 shows his valve seat angle at effectively 90° as shown by the following portion of Fig. 2:



Because Northup discloses neither (1) a valve that is coupled to a float such that the valve opens when the float rises above a preselected height within the container and the valve closes when the float falls to the preselected height within the container, (2) a valve that is associated with the fluid outlet, nor (3) a valve that is oriented at an angle that ranges from an angle greater than zero to about 60° relative to horizontal, claim 1 is not anticipated by Northup under 35

U.S.C. § 102(b). Claims 2, 20 and 21 depend from claim 1 and contain features that further distinguish these claims from the disclosure of Northup and, thus, also are not anticipated by Northup under 35 U.S.C. § 102(b).

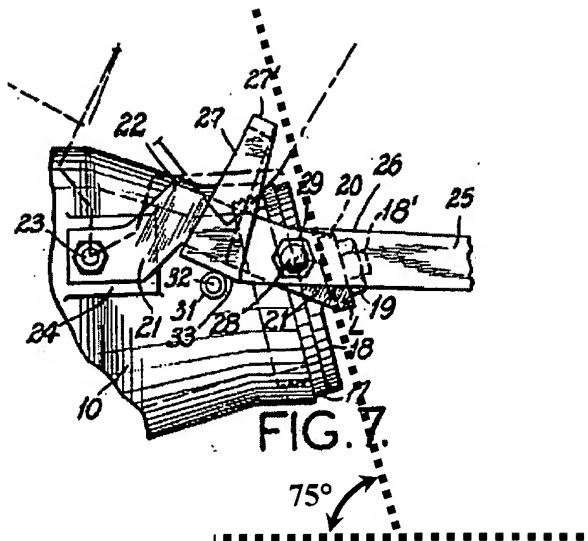
Independent claim 22 recites a valve coupled to an outlet that is oriented at an angle ranging from greater than zero to about 60 degrees relative to horizontal. As discussed above for claim 1, Northup does not disclose a valve coupled to an outlet or a valve that is oriented at an angle ranging from greater than zero to about 60 degrees relative to horizontal. For these reasons, claim 22 is not anticipated by Northup under 35 U.S.C. § 102(b). Claims 23, 24 and 25 depend from claim 22 and contain features that further distinguish these claims from the disclosure of Northup and, thus, also are not anticipated by Northup under 35 U.S.C. § 102(b).

Independent claim 30 recites a valve associated with an outlet that is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal. As discussed above for claim 1, Northup does not disclose a valve associated with an outlet or a valve that is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal. For these reasons, claim 30 is not anticipated by Northup under 35 U.S.C. § 102(b). Claim 31 depends from claim 30 and contains features that further distinguish the claim from the disclosure of Northup and, thus, also is not anticipated by Northup under 35 U.S.C. § 102(b).

B. Carson (U.S. 2,292,509)

Claim 35 recites (1) a valve seat that is positioned at an angle relative to a horizontal reference that ranges from greater than zero to about 60 degrees, and (2) a flapper valve coupled to the valve seat. Carson does not disclose a valve seat that is positioned at an angle relative to a horizontal reference that ranges from greater than zero to about 60 degrees or a flapper valve coupled to the valve seat.

Carson does not describe what valve seat angle his valve has in his specification. However, Carson's drawings provide a valve seat angle of approximately 75° as shown below with reference to Carson's Fig. 7:



Further, Carson only discloses the use of a disc valve, which, as shown clearly by Carson's Figs. 4 and 5, is *not* coupled to Carson's valve seat. In fact, as shown in Figs. 4 and 5, Carson's disc valve is completely removed from the valve seat during operation.

Because Carson discloses neither a valve seat that is positioned at an angle relative to a horizontal reference that ranges from greater than zero to about 60 degrees, nor a flapper valve coupled to the valve seat, claim 35 is not anticipated by Carson under 35 U.S.C. § 102(b).

III. 35 U.S.C. § 103(a)

A. *Northup*

Claims 15, 16, 17 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Northup. However, as discussed above, Northup does not disclose all the elements of claim 1. Further, the elements of claim 1 that are missing from the disclosure of Northup are not alleged, within this rejection, to be obvious from the disclosure of Northup. Because Northup does not disclose all the elements of claim 1 nor is Northup alleged to suggest the missing elements, claims 15, 16, 17 and 18, which depend from claim 1, cannot be considered obvious over Northup under 35 U.S.C. § 103(a).

B. *Clark (U.S. 5,348,041)*

Claims 26, 27, 28 and 29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Clark.

Amended claim 26 recites a valve that is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal. Clark does not disclose a valve that is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal. Rather, the valve disclosed in Clark "is on a plane perpendicular to the vertical axis of the float." Col. 9, lines 63-64. Simply changing the angle of Clark's valve is not an obvious modification because the float structure Clark discloses is not rotationally bound, *i.e.*, the float could become misaligned relative to the angled valve opening thereby preventing valve sealing.

Because Clark does not disclose or suggest a valve that is oriented at an angle that ranges from an angle greater than zero to about a 60° angle relative to horizontal, claim 26 cannot be considered obvious over Clark under 35 U.S.C. § 103(a). Claims 27, 28 and 29 depend from claim 26 and contain features that further distinguish these claims from the disclosure of Clark and, thus, also are not made obvious by Clark under 35 U.S.C. § 103(a).

C. Northup in view of Clark

Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Northup in view of Clark. However, as discussed above, Northup does not disclose all the elements of claim 1. Further, the elements of claim 1 that are missing from the disclosure of Northup are not alleged, within this rejection, to be obvious from the disclosures of Northup or Clark. Because neither Northup nor Clark disclose all the elements of claim 1 nor is either reference alleged to suggest the missing elements, claim 3, which depends from claim 1, cannot be considered obvious over Northup in view of Clark under 35 U.S.C. § 103(a).

D. Northup in view of Mirto (U.S. 3,974,654)

Claims 4, 9-10, 12 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Northup in view of Mirto. However, as discussed above, Northup does not disclose all the elements of claim 1. Further, the elements of claim 1 that are missing from the disclosure of Northup are not alleged, within this rejection, to be obvious from the disclosures of Northup or Mirto. Because neither Northup nor Mirto disclose all the elements of claim 1 nor is either reference alleged to suggest the missing elements, claims 4, 9-10, 12 and 13, which depend from claim 1, cannot be considered obvious over Northup in view of Mirto under 35 U.S.C. § 103(a).

E. Northup and Mirto in view of Schafer (U.S. 4,621,945)

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Northup and Mirto in view of Schafer. However, as discussed above, Northup does not disclose all the elements of claim 1. Further, the elements of claim 1 that are missing from the disclosure of Northup are not alleged, within this rejection, to be obvious from the disclosures of Northup, Mirto or Schafer. Because neither Northup, Mirto, nor Schafer disclose all the elements of claim 1 nor are any of the references alleged to suggest the missing elements, claim 5, which depends from claim 1, cannot be considered obvious over Northup and Mirto in view of Schafer under 35 U.S.C. § 103(a).

F. Northup in view of Porter (U.S. 5,456,235)

Claims 6, 7 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Northup in view of Porter. However, as discussed above, Northup does not disclose all the elements of claim 1. Further, the elements of claim 1 that are missing from the disclosure of Northup are not alleged, within this rejection, to be obvious from the disclosures of Northup or Porter. Because neither Northup nor Porter disclose all the elements of claim 1 nor is either reference alleged to suggest the missing elements, claims 6, 7 and 8, which depend from claim 1, cannot be considered obvious over Northup in view of Mirto under 35 U.S.C. § 103(a).

G. Northup in view of Schafer

Claims 14 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Northup in view of Schafer. However, as discussed above, Northup does not disclose all the elements of claim 1. Further, the elements of claim 1 that are missing from the disclosure of Northup are not alleged, within this rejection, to be obvious from the disclosures of Northup or Schafer. Because neither Northup nor Schafer disclose all the elements of claim 1 nor is either reference alleged to suggest the missing elements, claims 14 and 19, which depend from claim 1, cannot be considered obvious over Northup in view of Schafer under 35 U.S.C. § 103(a).

H. Northup in view of Mirto and Clark

Claim 32 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Northup in view of Mirto and Clark.

As amended, claim 32 recites a flapper valve coupled to a float such that the flapper valve opens when the float rises above a preselected height within the container and the flapper valve closes when the float falls to the preselected height within the container. Mirto does not disclose a flapper valve coupled to a float such that the valve opens when the float rises above a preselected height within the container and the valve closes when the float falls to the preselected height within the container. Rather, Mirto discloses a flapper valve that *closes* when a float rises and *opens* when the float falls. As discussed above with respect to claim 1, Northup also discloses a valve that *closes* when a float rises and *opens* when the float falls. Thus, the combination of Northup and Mirto also only discloses a valve that *closes* when a float rises and *opens* when the float falls.

Additionally, while Clark discloses a system in which a valve opens when a float rises and closes when a float falls, there is no motivation of combine this feature of Clark with Mirto. There is no motivation to combine Clark with Mirto because the valve of Mirto is intended to *prevent* water from flowing through the valve when the water level rises, whereas the purpose of the Clark valve is to allow as much water to flow out of the system as possible.

Because neither Northup, Mirto, nor Clark, either individually or in combination, disclose or suggest a flapper valve coupled to a float such that the valve opens when the float rises above a preselected height within the container and the valve closes when the float falls to the preselected height within the container, claim 32 cannot be considered obvious over Northup in view of Mirto and Clark under 35 U.S.C. § 103(a).

I. Northup in view of Mirto, Clark and Schafer

Claim 33 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Northup in view of Mirto, Clark and Schafer. However, as discussed above, Northup, Mirto and Clark do not disclose all the elements of claim 32. Further, the elements of claim 32 that are missing from the combination of Northup, Mirto and Clark are not alleged, within this rejection, to be obvious from the disclosures of Northup, Mirto, Clark or Schafer. Because neither Northup, Mirto, Clark nor Schafer disclose all the elements of claim 32 nor are any of these references alleged to suggest the missing elements, claim 33, which depends from claim 32, cannot be considered obvious over Northup in view of Mirto, Clark and Schafer under 35 U.S.C. § 103(a).

J. Carson in view of Schafer

Claim 36 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Carson in view of Schafer. However, as discussed above, Carson does not disclose all the elements of claim 35. Further, the elements of claim 35 that are missing from the disclosure of Carson are not alleged, within this rejection, to be obvious from the disclosures of Carson or Schafer. Because neither Carson nor Schafer disclose all the elements of claim 35 nor is either reference alleged to suggest the missing elements, claim 36, which depends from claim 35, cannot be considered obvious over Carson in view of Schafer under 35 U.S.C. § 103(a).

K. Northup in view of Schafer and Suazo

Claim 37 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Northup in view of Schafer and Suazo.

Claim 35 recites a valve seat that is positioned at an angle relative to a horizontal reference that ranges from greater than zero to about 60 degrees. As discussed above with respect to claim 1, Northup does not disclose a valve (which includes a valve seat) that is associated with a fluid outlet or a valve (which includes a valve seat) that is positioned at an angle relative to a horizontal reference that ranges from greater than zero to about 60 degrees. Therefore, Northup does not disclose all the elements of claim 35. Further, the elements of claim 35 that are missing from the disclosure of Northup are not alleged, within this rejection, to be obvious from the disclosures of Northup, Schafer or Suazo. Because neither Northup, Schafer, nor Suazo disclose or make obviously all the elements of claim 35, claim 37, which depends from claim 35, cannot be considered obvious over Northup in view of Schafer and Suazo under 35 U.S.C. § 103(a).

IV. Conclusion

For the reasons discussed above, Applicants respectfully submit that the application is in condition for allowance and allowance is requested.

Respectfully submitted,

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